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Title : Ontogeny of foraging behaviour in a patchy environment in grey seal pups

Category : Behavior

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Preferred Format : Either Oral or Poster Presentation

Abstract : We investigated the foraging behaviour of 2 freely diving captive female grey seal pups *Halichoerus grypus* in relation to prey density and pup experience. Experiments simulated voluntary 40m-deep dives. Prey was delivered at the bottom of the dive at a constant rate during a given dive, but varied randomly between dives (prey encounter rate PER range: 0-10 fish/min). Seals were considered "naïve" at the start of the experiment as they were just weaned, and "experienced" after 6 months of training. Diving behaviour was investigated in terms of dive duration, duration of descent/bottom/ascent time, swim speed during descent/bottom/ascent time. Feeding success (number of prey items eaten) was recorded for each dive.

For each pup, there was a positive sigmoid relationship between dive duration and PER, indicating the existence of a critical PER below which seals terminate the dives early. There were differences in the diving behaviour between pups. One pup showed a similar diving pattern for a given PER (except for PER=0) during both naïve and experienced dives in terms of dive duration, swim speed, proportion of time spent during descent/bottom/ascent phases, and feeding success. The second pup showed significant changes for a given PER: naïve dives were shorter, they had slower travel speed and consequently a smaller proportion of time spent at bottom and a lower feeding success. Experienced dives of the second pup were similar to the dives of the first pup, suggesting that the first pup had higher innate foraging skills.

These results (1) support the prediction that foraging effort should increase with increasing prey encounter rates, (2) support the prediction that duration of shallow dives should be related to prey encounter rate (Thompson & Fedak 2001), (3) suggest a plasticity in foraging skills immediately after weaning.

Thompson D, Fedak MA (2001) *Animal Behaviour* 61:287-296